BEFORE THE

Federal Communications Commission

WASHINGTON, D.C. 20554

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In the Matter of	)	Gen. Docket No. 90-314
	)	ET Docket No. 92-100
	)	
	)	RM-7140, RM-7175,
	)	RM-7617, RM-7618,
Amendment of the Commission's	)	RM-7760, RM-7782,
Rules to Establish New Personal	)	RM-7860, RM-7977,
Communications Services	)	RM-7978, RM-7979,
	)	RM-7980
	)	
	)	PP-35 through PP-40,
	)	PP-79 through PP-85

COMMENTS OF
DOMESTIC AUTOMATION COMPANY

Shirley S. Fujimoto
Christine M. Gill
Brian T. Ashby

Keller and Heckman
1001 G Street, N.W.
Suite 500 West
Washington, D.C. 20001
(202) 434-4100

Its Attorneys

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COMMENTS OF
DOMESTIC AUTOMATION COMPANY

Domestic Automation Company ("Domestic"), by its attorneys, hereby respectfully submits these Comments in response to the Notice of Proposed Rule Making and Tentative Decision ("Notice") adopted on July 16, 1992 by the Federal Communications Commission ("Commission") in the above-referenced proceeding.1/

I. Preliminary Statement

Domestic Automation Company is the developer and manufacturer of a specialized wireless data communications system. Domestic developed the system specifically for digital packet communications. While the system was designed primarily

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1/ 7 FCC Rcd. 5676.

to perform certain home automation functions, the system can also be used to provide, among other things, acknowledgement paging, two-way electronic messaging, and credit card verification services.

Domestic's system is composed of two operationally independent components; a wide area network ("WAN") and a local area network ("LAN"). The LAN portion of the system provides a link between numerous, low-power remote devices and a nearby (i.e., within 2,500 feet) transceiver. The transceivers are then connected to each other by the WAN portion of the system. Currently, due to the lack of a more suitable frequency home, the LAN portion of Domestic's system is designed to use the 902-928 MHz band which is set aside in Part 15 of the Commission's Rules for unlicensed operations. The WAN portion of the system utilizes other frequencies in the 900 MHz band.

As will be discussed in more detail below, even though the LAN is designed to operate in the 902-928 MHz band, that band does not offer the stable and homogenous operating environment required of digital data communications systems. Unfortunately, as will also be discussed more fully below, there are no attractive, viable alternatives to the 902-928 MHz band which are currently available for use by data communications systems. Consequently, since the Commission's Notice proposes to allocate the frequencies between 1910 MHz and 1930 MHz for use by data

communications systems and similar operations, Domestic appreciates having this opportunity to submit these Comments on the Commission's proposal.

The Notice, which was adopted by the Commission on July 16, 1992, is the latest in a long series of steps taken by the Commission to establish personal communications services ("PCS"). Generally speaking, the term PCS has come to mean a new class of mobile and/or portable telecommunications technologies and services that promise to free individuals from the constraints imposed by wire-based systems and networks.

The Notice proposes to allocate spectrum in the 2 GHz and 900 MHz bands for PCS. In addition, the Notice proposes rules and technical standards to govern the operation of PCS. While most of the spectrum set aside for PCS, as well as a majority of the proposed rules and technical standards, concern licensed PCS operations, the Notice also proposes to amend Part 15 of the Rules to accommodate certain unlicensed PCS-type operations. Under the proposed amendments, a limited class of PCS-type operations, including high and low speed data communications

systems, cordless telephones, and wireless private branch exchanges, could be operated on a unlicensed basis in the 1910-1930 MHz band.2/

II. Comments

Domestic applauds the Commission's proposal to allocate the spectrum between 1910 MHz and 1930 MHz for unlicensed, PCS-type operations. The proposed allocation would, for the first time, provide Domestic and other developers/manufacturers of digital data communications equipment with a suitable spectrum "home" for their equipment. For this reason, Domestic believes that the proposed allocation will result in the development and deployment of a whole host of new data communications systems, and thereby benefit the public by providing them with new and improved data communications capabilities.

As mentioned above, there is currently no suitable spectrum "home" for most digital data communications systems. These

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2/ The impetus for the proposed amendments to Part 15 were a number of rule making petitions that have been filed with the Commission over the past few years which ask the agency to permit unlicensed PCS-type operations in the 2 GHz band. Notice pp. 6-7, 17-18. The principal such petition was a Petition for Rule Making filed with the Commission on February 13, 1991 by Apple Computer, Inc. ("Apple's Petition") asking that the agency allocate spectrum in the 2 GHz band for unlicensed, local area, high speed data communications systems ("Data-PCS"). Apple Computer, Inc.'s Petition for Rule Making, RM-7618, p. 14 (February 13, 1991).

communications require a very high quality transmission environment. Data must be conveyed in such a way that it can be received with virtually total accuracy. In addition, effective data communications systems must provide for high capacity data throughput and real-time transmission. These requirements simply cannot be met by utilizing any of the frequency bands which are currently available for use by data communications systems.3/ For instance, the frequency band Domestic designed the LAN portion of its data communications to use, the 902-928 MHz band, is occupied by a vast array of disparate radio frequency devices employing different modulation schemes and power levels, and is therefore "the antithesis of the homogenous and stable operating environment needed for data communications."4/

In light of the above, Domestic commends the Commission's proposal to allocate the 1910-1930 MHz band for PCS-type operations such as data communications. Under proposed Section 15.253, systems used for the following purposes would be permitted to operate in the band:

> (1) Cordless telephones, including wireless PBX systems. Intercom and paging operations are permitted between portable, base and mobile stations without using the public switched telephone network provided these are not intended to be the primary modes of operation.

3/ RM-7618, p. 10.

4/ RM-7618, p. 14.

(2) Data communications between computer systems.5/

These permissible operations, while somewhat limited to ensure the creation of a hospitable operating environment for data communications systems, are still defined in broad enough terms to allow for a wide variety of unlicensed operations in the 1910-1930 MHz band. For instance, by allowing for "[d]ata communications between computer systems," proposed Section 15.253 would allow for the operation of a new generation of devices known generally as "personal digital assistants." Since the LAN portion of Domestic's system provides data communications between microcomputer-based devices, Domestic's LAN could also be operated in the 1910-1930 MHz band under proposed Section 15.253. Therefore, by proposing to allocate the 1910-1930 MHz band for unlicensed PCS-type operations, Domestic believes that the proposed amendments to Part 15 will facilitate the development and deployment of innovative technologies and services which will provide many public benefits.

For the above-described reasons, Domestic applauds the Commission's proposed amendments to Part 15. However, Domestic does recommend that two minor modifications be made to the techincal standards proposed in the Notice. First, Domestic recommends that the frequency tolerance established in proposed Section 15.253 (i.e., ± 0.0001% or 1 part per million over

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5/ Notice, p. 70.

temperature) be amended so that it more closely resembles the frequency tolerances set forth in Part 15.6/ In this regard, Domestic does not believe that proposed Section 15.253's channelization plan warrants the frequency tolerances listed in that section. Specifically, under proposed Section 15.253, the block of spectrum designated for broadband technologies would allow a 2 MHz minimum bandwidth that would not seem to require the tight tolerance listed.7/ The block of four 1.25 MHz channels is similarly burdened. It is not clear to Domestic what benefit would be obtained from this frequency tolerance, but the cost to the public in the form of higher equipment prices is undeniable. Consequently, Domestic recommends that the Commission establish a frequency tolerance similar to those in Part 15 for both the 10 MHz and 1.25 MHz allocations.

Second, Domestic believes that the spectral efficiency requirements set forth in proposed Section 15.253 are inappropriate for both the 10 MHz block of spectrum set aside for broadband technologies and the block of four 1.25 MHz channels. For example, a 100 milliwatt transmitter operating in the 10 MHz broadband spectrum block that utilizes a bandwidth of 2 MHz would

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6/ Notice, pp. 70-72.

7/ The Notice proposes to divide the 1910-1930 MHz band into three different blocks: (1) a 10 MHz block for broadband technologies; (2) a 5 MHz block divided into four 1.25 MHz channels; and (3) a 5 MHz block divided into fifty 100 kHz channels for narrowband technologies.

have to achieve 2 megabytes per second to meet proposed Section 15.253's spectral efficiency requirements. This is not consistent with the requirements for spread spectrum operations contained in Part 15. Therefore, Domestic recommends that proposed Section 15.253 be amended to eliminate the spectrum efficiency requirement for both the 10 MHz block of spectrum set aside for broadband technologies and the block of four 1.25 MHz channels.

WHEREFORE, THE PREMISES CONSIDERED, Domestic Automation Company respectfully requests that the Federal Communications Commission act in a manner consistent with the views expressed herein.

Respectfully submitted,

DOMESTIC AUTOMATION COMPANY

By: Shirley S. Fujimoto/BTA

Shirley S. Fujimoto
Brian T. Ashby

Keller and Heckman
1001 G Street, N.W.
Suite 500 West
Washington, D.C. 20001
(202) 434-4100

Its Attorneys

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